

REMARKS

Applicants appreciate the thoroughness with which the Examiner has examined the above-identified application. Reconsideration is requested in view of the amendments above and the remarks below.

Claims 1, 10, 16 and 25 have been amended for clarification purposes to overcome the objections under 35 U.S.C. 101 and the rejections under 35 U.S.C. 112, second paragraph. It is submitted that the claim amendments would not require a further search of the prior art, and as such, the amendment should be entered.

No new matter has been added.

Allowable Subject Matter

The Examiner has indicated that claims 10 and 12-15 would be allowable if amended to overcome the rejections under 35 U.S.C. 112, and that claims 1, 3-9, 16, and 18-24 would be allowable if amended to overcome the rejections under 35 U.S.C. 112 and 35 U.S.C. 101. For the reasons as discussed below in detail, applicants submit that claims 1, 3-10, 12-16, and 18-24 have been amended such that these claims are now in a condition for allowance.

No new matter has been added.

Claim objections

The Examiner has objected to claims 1, 3-9, and 21-25 under 35 U.S.C. 101 stating that the claimed invention is directed to non-statutory subject matter. Applicant has amended independent claims 1 and 25 to clarify that the photomask layout created in accordance with the claimed method is used to produce the useful, concrete and

tangible result of generating a pattern corresponding to this photomask layout on a photomask that is projected onto a resist layer. In view of the foregoing amendments, applicants submit that the amended claims produce a "useful, concrete and tangible result," and as such, overcome the rejections under 35 U.S.C. 101. *State Street Bank & Trust Co. v. Signature Financial Group Inc.*, 149 F.3d 1368, 1373-74, 47 USPQ2d 1596, 1601-02 (Fed. Cir. 1998); MPEP 2106. Support for the amendments can be found in the specification at least at paragraphs [0003] and [0027] and in Fig. 1.

In view of the foregoing, applicants submit that independent claims 1 and 25, and as such, claims 3-9 and 21-24 dependent on claim 1, are in a condition for allowance.

The Examiner has also rejected claims 16 and 18-20 under 35 U.S.C. 101 on the grounds of non-statutory subject matter. Applicants disagree and traverse this rejection.

It is submitted that the originally filed claim language of a "computer-usable medium" has been previously acceptable by the USPTO, and is the same language " 'a computer usable medium' on which was stored 'computer readable program code means' " language accepted by the Commissioner in *In re Beauregard* 53 F3d 1583 (Fed. Cir. 1995).

Nonetheless, to better address the Examiner's concern and clarify the statutory nature of these claims, the phrase "computer-usable medium" in independent claim 16 has been amended to "computer readable medium," which is statutory subject matter that is supported in the USPTO's *Examination Guidelines for Computer-Related Inventions*. Accordingly, it is submitted that independent claim 16, and claims 18-20 dependent thereon, are all in a condition for allowance.

No new matter has been added.

Rejection under 35 USC § 112, second paragraph

The Examiner has rejected claims 1, 3-9, and 21-25 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants have amended claims 1, 10, and 16 to correct for antecedent basis errors and for clarification purposes. In particular, claims 1, 10 and 16 have been amended to clarify that the three types of bisectors are of a first type of bisector, a second type of bisector, and a third type of bisector, as suggested by the examiner. It has also been clarified that each type of bisector may consist of one of such bisector.

It is submitted that the amendments to claims 1, 10, and 16 overcome the rejection of claims 1, 3-9, and 21-25 under 35 U.S.C. 112, second paragraph.

No new matter has been added.

Rejection under 35 USC § 103

The Examiner has rejected claim 25 under 35 U.S.C. 103(a) as being unpatentable over U.S. Pub. No. 2004/0005089 (filed Jan. 31, 2003, hereinafter "Robles et al.") in view of U.S. Patent No. 6,178,539 (issued Jan. 23, 2001, hereinafter "Papadopoulou et al.") and U.S. Pub. No. 2002/0155357 (filed Apr. 18, 2001, hereinafter "LaCour").

Amended independent claim 25 is directed to a method of creating a photomask layout for projecting an image of an integrated circuit design by creating a layout of spaced integrated circuit shapes to be projected via a photomask and creating Voronoi cells around the spaced integrated circuit shapes. Bisectors are then determined


between adjacent ones of the spaced integrated circuit shapes. These bisectors are locus of points equidistant from edges of the adjacent spaced integrated circuit shapes and define shared boundaries of adjacent Voronoi cells. An essential feature is that different types of these bisectors are identified based on vertices of such bisectors, and using these different types of bisectors, sub-resolution assist features are created along at least some of the bisectors between the adjacent ones of the spaced integrated circuit shapes. The sub-resolution assist features extend along the bisectors beyond an adjacent spaced integrated circuit shape, whereby each sub-resolution assist feature has a length at least five times its width, such that, those that violate this rule are deleted.

As acknowledged in the Examiner's Response to Argument section of the above-identified Office Action, Neither Robles nor Papadopoulou, alone or in combination, disclose or suggest creating Voronoi cells around spaced IC shapes, determining bisectors representing defined shared boundaries of adjacent Voronoi cells (and are equidistant from edges of adjacent IC shapes), whereby different types of bisectors are determined based on the vertices thereof. As such, neither Robles nor Papadopoulou, alone or in combination, disclose or suggest creating SRAFs between adjacent ones of the spaced IC shapes based on these different types of bisectors. The Examiner has also acknowledged that LaCour does not teach or suggest identifying different types of bisectors, and then creating SRAFs in locations based on these different types of bisectors, as is currently claimed. Accordingly, it is submitted that claim 25 is also in a condition for allowance.

In view of the foregoing, it is submitted that claims 1, 3-10, 12-16, and 18-25 are in condition for allowance.

It is respectfully submitted that the application has now been brought into a condition where allowance of the entire case is proper. Reconsideration and issuance of a notice of allowance are respectfully solicited.

Respectfully submitted,


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